many patients with cardiac lesions stand childbearing surprisingly well. The first stage of labour does not involve much strain, the second stage involves most strain, and during the third stage there is a fall in blood pressure with a coincident tendency to collapse. Since the essential cause of cardiac failure lies in the heart muscle, it is of the greatest importance to ascertain how the heart responds to exercise. In considering these cases, four points have to be determined: (1) the degree of cardiac failure, (2) the stage of the pregnancy, (3) the cause of the present attack, (4) the response to treatment. As a general principle, pregnancy should not be terminated in cases of cardiac failure until a reasonable period of rest and other therapeutic measures have been tried. If it has been decided to terminate the pregnancy, an attempt should be made to treat the existing cardiac failure first. Of the valvular lesions complicating pregnancy mitral stenosis is the most serious. In both mitral stenosis and aortic incompetence if the lesion be severe, it is permissible to induce labour.

Insanity during pregnancy comprises less than 1 per cent of the total incidence of insanity in women, yet pregnancy accompanied by mild mental disorders is not uncommon. In the later months of pregnancy, if insanity develops, it usually persists for several months after delivery, whether labour is induced prematurely or not. A woman who has had an attack of puerperal insanity should be warned against future pregnancies, but should such occur, Dr. Cole advised letting the pregnancy continue even though the mental condition would probably recur, for about 75 per cent of cases of puerperal insanity recover. Maniac depressive psychoses and dementia præcox are the two most usual types of insanity seen. In Dr. Cole's opinion ill-health of the mother jeopardizing her life is the only indication for induction of abortion. Seldom in brain and mental conditions is abortion necessary or to be advised.

In the closing paper Dr. Evers urged that the human ovum should be safeguarded whenever possible. Termination of pregnancy was neither an ethical or professional question but purely legal and moral.

In the discussion which followed, Dr. R. A. Young of London, in speaking of tuberculosis propounded two aphorisms for consideration, "(1) treat the disease and manage the pregnancy, and (2) prevention is better than abortion."

E. PERCIVAL

EXTRAMURAL POST-GRADUATE COURSE

The Meetings in Calgary

The profession in every province appear keenly appreciative of the quality and character of the instruction given under this extramural scheme. As an illustration, the following abstract of the series of addresses which were given to the physicians of Calgary during the first week of July is presented to our readers. The speakers were Dr. Duncan Graham and Dr. W. B. Hendry, of Toronto University, Professor Miller of Queen's University, and Dr. A. J. Grant of the Western University of Ontario. The subject of Dr. Grant's address was "Diseases of the female breast", but as we have already published in a recent number a paper by him on this subject we will only say that the address was both interesting and practical. The subject of Professor Miller's address was "The present position of the cancer problem." As we have been promised a paper on this subject by Professor Miller, we will make no further reference to it on the present occasion. Dr. Hendry took for his subject "The toxæmias of pregnancy," a condition which he said must be regarded as a disturbance of metabolism brought on by pregnancy. To determine the metabolic variations present the aid of blood chemical examination and urinalysis are our chief reliance to-day. In healthy non-pregnant women there is a constant ratio between intake and output of water and solids. This ratio is known as the water balance. During pregnancy there is an increased dilution of the blood until the seventh or eighth month, after which the dilution ceases. The chloride content of the maternal tissues keeps pace with the amount of hydræmia present. During the first trimester, when the placenta and fœtus are being formed the hydræmia increases, whilst late in the second trimester it becomes lessened. Professor Hendry referred to the investigations of Harding and Duncan* who in 1918 reported on the effect of high carbohydrate feeding in seventy cases of early nausea and vomiting of pregnancy. Their

* *Can. Med. Ass. Jour.*, Dec., 1918, viii, 1057-1069.

conclusions were that the dominant factor in the early toxæmia of pregnancy is a metabolic one due to a temporary lack of carbohydrate supply. Acetone bodies were found in the urine in practically all cases of nausea and vomiting of pregnancy. These investigators also endeavoured to show a connection between a fatty degenerated liver found at post mortem in fatal cases of pernicious vomiting with the mild and moderate cases of vomiting. They administered glucose or lactose to correct the deficiency of carbohydrate supply and supplemented this with a high carbohydrate diet. Over seventy cases were so treated with success including several cases in which nausea and vomiting were severe.

The treatment of patients suffering from the early toxæmia of pregnancy at the Burnside Hospital, Toronto, with which institution Professor Hendry is connected, is as follows: the patient is isolated; a thorough physical examination is made, and appropriate treatment is given to any pelvic lesion that may be present. Five per cent glucose solution is given intravenously until 40 ounces of urine have been excreted and the acetone bodies have disappeared and the specific gravity of the urine reaches 1010 or lower. Later on rectal injections of 10 per cent glucose solution are administered with equal parts of normal saline solution. If thought necessary to secure rest chloral hydrate, gr. xx with sodium bromide gr. xx may be given at bedtime per rectum. No solids are allowed by the mouth. Daily records of water intake and output are kept. The presence of acetone bodies in the urine are registered. The diet consists entirely of carbohydrates. When pernicious vomiting and toxæmia develops and is associated with a dry tongue and loss in weight, pregnancy should be terminated. It is not well to wait until too late before emptying the uterus.

In the toxæmias of pregnancy the excretion of nitrogenous products is not seriously impaired. If the kidneys can take care of the waste products, there is no necessity of starving the patient. In true toxæmia, hydræmia is associated with retention of salt in the body. In the pre-eclamptic stage there is always an increase of hydræmia and a marked retention of chloride, hence the amount of chlorides in the body should be lessened. The speaker referred to the recent work of Harding and Van Nott on the salt-free diet treatment of pre-eclamptic patients. These authors found that in patients manifesting pre-eclamptic symptoms, a diet high in protein or fat but salt-free produced no aggravation of symptoms. On the contrary it induced clinical improvement. Professor Hendry then outlined the treatment given to pre-eclamptics at the Burnside Hospital, Toronto. The patient is isolated. A mixed but salt-free diet is given until the chlorides reach a normal level. A careful record is kept of the intake and output of fluids. The specific gravity of the urine is watched.

In the treatment of eclampsia there are two opposing schools, namely the conservative and the radical. Of the two it may be said that the conservative methods of treatment yield the best results. This depends on keeping the patient absolutely at rest; morphine sulphate is administered hypodermically, the size of the dose depending on the size of the patient. One half grain is the average amount to be given as an initial dose. The Stroganoff treatment includes the administration of a small amount of chloroform, whilst the patient is being prepared and whilst waiting for the hypodermic of morphine. The patient should on no account be moved without a little chloroform. This is one of the essentials of success.

Under the influence of chloroform the stomach should be washed out and an ounce of magnesium sulphate left in. It may be wise to clear out the colon by means of an enema. As to emptying the uterus medicinal means are the best, and this object can best be secured by the use of pituitary extract. To induce labour half a c.c. of pituitary extract should be given intramuscularly every half hour for six doses. The use of bougies is dangerous and when used may give poor results. Accouchement force is always attended with certain dangers especially with the production of shock. With Cæsarean section there is much less shock. Vaginal hysterotomy Professor Hendry has sometimes found to be a valuable means of emptying the uterus.

Dr. Graham followed with an excellent address on "Types of heart disease" in which he called attention to the great number of deaths from heart disease. He emphasized the importance of heart disease in children, and called attention to its early clinical signs, to which he said greater attention should be paid by both mother and by school physicians, so that early cases may be

brought to light and properly cared for. In the prevention and treatment of rheumatic fever and its complications controlled rest played an all important part. Researches at the Rockefeller Institute demonstrated that patients with rheumatic fever should spend two to three months in bed in the hospital with absolute rest in all early cases. The salicylates undoubtedly are the most important drugs we possess in the way of medicinal treatment. Sore throat is often an early manifestation of rheumatic infection and the tonsils would appear to be portals of entry for the infective agent. Professor Graham considers tonsillectomy as of value where there is any evidence of septic infection. When there is a history of recurring attacks of tonsillitis the tonsils should be removed but he considers it better to wait until the disease is under control before removing them as there is danger from nephritis arising from infective embolism.

In the succeeding series of lectures Dr. Grant discussed "Injury to the shoulder joint," Professor Hendry spoke on "Aids to labour," and Professor Graham took up the question of "Diseases of the upper mediastinum."

G. E. LEARMONTH

STRUCTURE OF NEURONE JUNCTIONS

Two papers are contributed to the Australian *Journal of Experimental Biology and Medical Science*, June, 1926, by O. W. Tiegs. Tiegs disputes the adequacy of the commonly accepted conception of the neurone, maintaining that it does not explain certain features of the behaviour of the central nervous system which are explicable, if we assume the existence of numerous conducting paths within individual neurones. He declares that his investigations show that, so far as the microscope can reveal, the mode of termination of neurones on all the spinal cord cells is the same, and no such thing as a ramifying, discontinuous synapse exists. His conclusions are that the fine collaterals that enter the gray matter from the white matter of the spinal cord converge upon and penetrate the dendrites of the nerve cells of the gray matter, and are continuous with and undistinguishable from the neurofibrils of the nerve cells; that on entering a nerve cell they pass independently of one another, as the neurofibrils, toward the middle of the cell, where they anastomose; from this anastomosing system a small number of neurofibrils arise which emerge through the axone; the anastomosing system appears to be the seat of the nervous integration, with the component phenomena of summation, inhibition, fatigue, delay, one-directional conduction, etc. It will be noted that this differs from the conceptions of neurone continuity advanced by Gerlach, Golgi and Nansen, and Bethe. Tiegs considers that dendrites are relatively short structures, and that the greater portion of the enormous "dendrites" made apparent by the Golgi method are bundles of neurofibrillæ whose real nature is obscured through a defect in the method of staining.

W. H. HATTIE

A DOCTOR'S SIGNBOARD

To the Editor:

Sir,—I send you a photograph of an early 17th century doctor's signboard, which is preserved at the Royal College of Surgeons. It formerly belonged to the late Mr. Manley

THE SURGEON AND THE SEVEN SURGICAL OPERATIONS

Sims, F.R.C.S., and was brought to London from Poole, where, presumably, it had been in use. In the centre of the panel, which is of wood, painted, stands the doctor himself, surrounded by the seven surgical operations: Left—bleeding, amputation, dentistry; Centre —examination of urine; Right—reduction of